CENSUS OF THE BIRDS OF
RANCHO LA BREA

OLD, 1931

Order Gaviiformes

1 Order Colymbiformes ---------- 1 1

Order Procellariiformes

1 Order Pelecaniformes

Family Phalacrocoracidae ----- from Pit 10 ------ 1

35 Order Ciconiiformes ---------- 36

Family Ardeidae ---------- 8

1 ♀ Ardea herodias ---------- 3
Florida caerulea, or
Hydranassa tricolor ---------- 1
Nycticorax nycticorax ---------- 1
Botaurus lentiginosus ---------- 3
Mycteria ame

Family Ciconiidae ---------- 29

Mycteria americana ? ---------- 1
Jabiru near mycteria and
1 ♀ 27 Ciconia maltha *** ---------- 28

Family Threskiornithidae ---------- 2

1 ♀ Plegadis guarauna ---------- 1
Ajaia ajaja ---------- 1

98 Order Anseriformes ---------- 98 98

2526 Order Falconiformes ---------- 2485

Family Cathartidae 399 462

Cathartes aura ---------- 9
2 ♀ Coragyps occidentalis ---------- 181
Gymnogyps californianus ---------- 191
Sarcoramphus clarki ---------- 2
Cathartornis gracilis ---------- 2

Family Teratornithidae 108

Teratornis merriami ---------- 108

Family Accipitridae 738

Circus hudsonius ---------- 90
Elanus leucurus ---------- 2
Accipiter velox ---------- 2
Accipiter cooperii ---------- 33
Buteo borealis? ---------- 110
Buteo lineatus? ---------- 8
Buteo swainsoni ---------- 82

677
2492
1036
4199

Order Falconiformes continued

Family Accipitridae continued 1407

	Morphnus woodwardi	~~17~~ 21
	Wetmoregyps daggetti	4
	Geranoaetus grinelli	~~79~~ 81
349	Geranoaetus fragilis	~~65~~ 73
	Aquila chrysaetos	~~856~~ 880
	Haliaeetus leucocephalus	154 156
	Neogyps errans	70 73
849	Neophrontops americanus	112 119

1407

Family Falconidae 282 ~~279~~

	Polyborus cheriway	250
	Falco mexicanus	7
	Falco peregrinus	4
	Falco columbarius	6
	Falco sparverius	12
	Falco sp.	1

618 Order Galliformes ~~618~~ 282

Family Perdicidae

1049	Lophortyx sp.?	101

Family Meleagridae

1529	Parapavo californicus	~~515~~ 517

30 Order Gruiformes ~~30~~

Family Gruidae — 30

	Grus canadensis	29
	Grus americana	1

57 Order Charadriiformes 57

13 Order Columbiformes 13

Family Columbidae

	Columba fasciata	1
	Zenaidura macroura	12

12 Order Cuculiformes 12

Family Cuculidae

	Geococcyx californianus	12

404 Order Strigiformes ~~472~~ 404

1134 Family Tytonidae

	Tyto alba	~~170~~ 94

~~470~~ 280

0.93
2.35
60.32
14.8
0.71
1.4
0.31
0.31
9.65
0.42
8.83
9.80

Order Strigiformes continued

Family Strigidae

Otus asio	6
Bubo virginianus	107
Asio wilsonianus and Asio flammeus	76
Glaucidium gnoma	1
Speotyto cunicularia	116

Order Caprimulgiformes

Order Micropodidiformes

Order Coraciiformes

Order Piciformes — 18

Order Passeriformes — 344

Family Corvidae

Corvus corax	88
Corvus brachyrhynchos **	59
C. b. hesperis	(21)
C. b. caurinus	(30)
Aphelocoma californica	4
Pica	104
Other passerines	89

1
39
98
2526
618
30
58
13
12
404
18
370
4187

21
4
81
73
880
156
73
119
1407
2
2
33
113
9
82
90
1938
281
379
108
2526
52

82
17
68
62
6

465
66
399

23
22
22
2
1
17
66
52

68
26
42

42 25 42
4173

4187) 89000 .0093
37683
18170

4187) 98.00 .0234
8374
14260
12561
1699

4187) 25260 .1478
25122
13800
12561
12390

4187) 618.0
4187
1993
16748
3120

4187) 13000 .0031
12561
439

4187) 5800 .0138
4187
16139
12561
3578

4187) 12000 .0028
8374
3626

4187) 30000 .0071
29309
691

4187) 40400 .0096
37683
2717

4187) 37000 .0083
33496
3504
33496
1548

4187) 18000 .0042
16748
1252

3182
29309
2510

27170
25122
2048

Comparing the results of these censuses with the earlier one of the entire assemblage we note:

1. Greater total number of individuals 4189 - ~~5727~~ 5460
   This is due in part to better identification of specimens but more particularly to the fact that there is little likelihood of parts of the same indiv. occurring in two pits, so that lefts could be counted in one pit and rights in another.
   Per pit -- total individual count varies from 97-1661
2. Total species recognized greater 54 - ~~130~~ 113 (130 all told)
3. Total species per pit, however, varies from 17 - 86
   no one pit has the full ~~130~~ 110
4. Total no. of extinct species greater 14-18
   No one pit has full ~~18~~ 17 (9 - 15) 1-16
5. Total no. of extint individuals relative to total count varies from pit to pit -- none precisely the same % as in the former overall census (35%)
   varies from .6 % - 47.8 %
6. Raptores remain most abundant but whereas the Falconiformes were predominant in the overall census, analysis by pits shows the owls to predominante in one pit/
7. The Golden Eagle, which was the most abundant species in the general census, is well represented in each pit, but leads in only 4;

   Gymnogyps amplus is the dominant species in 3 pits
   Parapavo californicus " " " 1
   Pica nuttalli 1
   Speotyto cunicularia 2
   Buteo swainsoni 1

8. Waterbirds comprised about 5% of the total in former census
   Pit by pit, the groups varies from 1.8 to ~~28%~~ 33.8%
9. Passerines and woodpecikers made up 9% of total former census
   Pit by pit, represen ation is from 1 to ~~28%~~ 22.3 %
10. Galliformes comprised nearly 15 % of avifauna formerely 2nd
    Pit pit zero to 22.6
11. By groups, former census showed Falconiformes most abundant(60%) Galliformes next with 14.7, then owls (9.6), passerines and woods (9.0) and waterbirds last (5.3)

The remaining nine pits ~~xxxxxxxxxx~~ can probably all be assumed to be late Pleistocene in age. The following extinct species occur in all

	Ciconia maltha	L* 1-10 indivs per pit	
*	Coragyps occidentalis	1-61	(3 in p 10)
*	Gymnogyps amplus	3-88	1
*	Teratornis merriami	1-22	6 (1/28)
*	Urubitinga fragilis	2-27	2
*	Neophrontops americanus	2-40	4
*	Polyborus prelutosus	2-144	3 (1/28;2/37)
*	Parapavo californicus	10-238	10 (1 in 28)

List of birds recorded from Rancho La Brea from Paul Lewis' mss for writers project

Colymbiformes -- Grebes
Pied-billed Grebe (Podilymbus)
Eared or Horned Grebe (Colymbus)

Ciconiiformes -- Herons, Storks, Ibises, etc.
Great Blue Heron (Ardea)
American Egret (Casmerodius)
Snowy Egret? (Egretta)
Little Blue Heron? (Florida)
Green Heron (Butorides)
Night Heron (Nycticorax)
Bittern (Botaurus)
*La Brea Wood Ibis (Mycteria)
*La Brea Stork (Ciconia)
Glossy Ibis (Plegadis)
Roseate Spoonbill? (Ajaia)

Anseriformes -- Swans, Geese, Ducks
Swan (Cygnus)
Canada Goose (Branta)
Snow Goose (Chen)
Ross Goose? (Chen)
White-fronted Goose (Anser)
*Pigmy Goose (Anabernicula)
Mallard Duck (Anas)
Green-winged Teal (Nettion)
Gadwall (Chaulelasmus)
Shoveller Duck? (Spatula)
Canvasback Duck? (Nyroca)

Falconiformes -- Diurnal Raptores
Turkey Vulture (Cathartes)
Occidental Vulture (Coragyps)
California Condor (Gymnogyps)
*La Brea Condor (Breagyps)
*Merriams's Teratorn (Teratornis)
*Another large vulture-like bird similar to Teratornis (Cathartornis)
White-tailed Kite (Elanus)
Marsh Hawk (Circus)
Goshawk (Astur)
Sharp-shinned Hawk (Accipiter)
Cooper Hawk (Accipiter)
Red-tailed Hawk (Buteo)
Swainson Hawk (Buteo)
American Rough-leg (Buteo)
Ferruginous Rough-leg (Buteo)
*Daggett Eagle (Wetmoregyps)
*Fragile Eagle (Urubitinga)
*Woodward Eagle (Morphnus)
Golden Eagle (Aquila)
*Grinnell Eagle (Spizaëtus)
Bald Ealge (Haliaëtus)
*Errant Ealge (Neogyps)
*American Neophron (Neophrontops)
*Caracara (Polyborus)
Prairie Falcon (Falco)
Duck Hawk (Falco)
Pigeon Hawk (Falco)
Sparrow Hawk (Falco)

Galliformes -- Gallinaceous Birds
Quail (Lophortyx)
*California Turkey (Parapavo)

Gruiformes -- Cranes
Little Brown Crane (Grus)
Whooping Crane (Grus)

Birds of Rancho La Brea continued

Charadriiformes -- Shorebirds
- Killdeer (Oxyechus)
- Black-bellied Plover (Squatarola)
- Snipe (Capella)
- Long-billed Curlew (Numenius)
- Hudsonian Curlew (Phaeopus)
- Yellowlegs (Totanus)
- Dowitcher (Limnodromus)
- Godwit? (Limosa)
- Avocet (Recurvirostra)
- Kittiwake?(Rissa)
- Gull (Larus)

Columbiformes -- Pigeons
- Band-tailed Pigeon (Columba)
- Passenger Pigeon (Ectopistes)
- Mourning Dove (Zenaidura)

Cuculiformes -- Cuckoos, etc.
- Roadrunner (Geococcyx)

Stigiformes -- OWls
- Barn Owl (Tyto)
- Screech Owl)(Otus)
- Horned Owl (Bubo)
- Pigmy Owl (Glaucidium)
- Burrowing Owl (Speotyto)
- *La Brea Owl (Strix)
- Eared Owls(Asio)-- two species) Long-eared Owl, Short-eared Owl
- Saw-whet Owl (Cryptoglaux)

Piciformes -- Woodpeckers
- Lewis Woodpecker (Asyndesmus)
- Flicker (Colaptes)

Passeriformes -- Perching Birds
- Kingbird (Tyrannus)
- Horned Lark (Otocoris)
- Magpie (Pica)
- Jay (Aphelocoma)
- Raven (Corvus)
- Northwest Crow (Corvus)
- Western Crow (Corvus)
- Chickadee (Penthestes)
- Thrasher (Toxostoma)
- Bluebird (Sialia)
- Cedar Waxwing (Bombycilla)
- Shrike (Lanius)
- Meadow Lark (Sturnella)
- Blackbirds(Agelaius) and Xanthocephalus?)
- *La Brea Blackbird (Euphagus)
- Oriole (Icterus)
- Sparrows

Number of bird bones - 87,066

" " indiv. birds - 4,303 < date?)
maeluta
oldausus

Falconiformes	2570	—	59.73%	2526
Galliformes	645	—	14.99	618
Passeriformes	370	—	8.60	370
Strigiformes	305	—	7.09	404
Anseriformes	173	—	4.02	98
Charadriiformes	85	—	1.97	58
Ciconiiformes	53	—	1.23	39
Gruiformes	33	—	.77	30
Columbiformes	31	—	.72	13
Piciformes	20	—	.46	20
Cuculiformes	16	—	.37	12
Coliiformes	2	—	.05	1

4293

Looking at all data - There are Three Things immediately noticeable

(2) Although There is variation from pit to pit, There is a general characteristic avifauna of the Pleisto pits

Ciconia maltha - all Pleisto, including 36

Geese of one species or another " " "

[ducks were not present in 60 or 77]

Gymnogyps, Gymnogyps Tetratus - in all Pleisto (including 36)

Cathartes also - and in Recent

[Breagyps absent in 60, 36 & all Recent]

Red-Tailed hawk - ↑ Roxbley (all including 28 & 37, 10 & 36) ~~all (except 28 & 37)~~

Urubitinga fragilis - all except ~~28~~ & 37

Aquila chrysaetos - ALL

Spizaetus ~~spizaetus~~ spinnelli all Pleisto (& 10 not ~~except~~ 28, 36, 37)

Neogyps errans " " & 10 (" " " ")

Neophrontops americanus " " & 10 & 36 (not 28, 37)

Polyborus ALL

at least one sp. of falcon in ALL

Parapavo in ~~all~~ but 37 Resident (many 89)

[no trace in 3, 13, 60, 77, 28, 37 (only 1 in 10 but 13 in Pit 36)]

Grus canadensis in all but 28

Bubo virginianus in all but 37

[owls of some kind in ~~ALL~~ pits

Passerines - in complete pictures or small ones

probably (due to care in preservation)

Corvus corax all but 77

Corvus (crow) not in 60 or 77 all others

Pica nuttalli " " 61-67 or 77 & not in 28 or 37

(1) The pits fall into two general groups
& have the typical Pleist. avifauna
4 " some of " " " " but in dif. proportion

(2) ~~Varies from pit to pit within the 8 Pleist to within the 8 pits that are in spite of variations there is a general annual similarity of the 8 pits~~

Among the 8 Pleist pits two seemingly ~~have~~ supported actual ponds of water, whereas the other 6 may have been ~~so~~ bordered by marshy ground or held water occasionally but in contact to the rare, were not water bird areas. Pits 16 & Acad both ~~supported~~ contained quite a good waterbird fauna

(3) In spite of ecologic variations, the ~~Pleist~~ avifauna for the present areas all pits was similar.

~~Rare~~
The rarer species
Anabernicula (check whether with Mck. fauna
best in Acad. near water)
Wetmoregyps Pit 4 (4); Acad (2) & A (3)
Morphnus woodwardi 3, 4, 16, 60, 61-67, Acad,
(NOT 13, 34, 77, 28 or 37) OK in 10
Thrasaetus lituidus #
Domest pigeons most in 16 -
~~Strix~~ brea (3, 4, 8, 61-67, Acad (36?)

See letter from
J. E. Gilbert
Mus. Mus. Bus.
Oct 12, 1933
regards loc. 3
Acad Pit

Comments on old 1930 paper (Condor 32:81-88)

p. 85 quail's abundance – placed third of smaller birds

Spizella 116
Pica nuttalli 104
Zonotrichia 101
Sturnella
~~Stur~~ Icterus

present census → ~~222~~ 8 plots heavy in 10, 28, 37
141 8 plots (over ½ in 14, 1/10 in 36)
111 only 6 plots (over ½ in 16, over 1/10 in 36)
115 10 plots (over ½ in 10, 10% in 25)
154 11 plots

p. 83 nycteia ~~nat~~ americana wetmorei in La Hi call - but is part of Acad-call, & found

p. 83 no estimate on young here

p. 83 order of abund. falconif, gallif. stirpicolous
about same when 12 plots combined

falconif.	3076	404
stirpic.	727	618
gallif.	689	370
passerif.	471	98
cursorif.	187	58
charad	123	39
cicon[illegible]	68	30
gruif.	43	13
columb	33	20
picif.	23	12
cuculif	17	1
calymbi.	2	

p. 83 families not shown now but Tyto under new 202
Equal 111
prev. 101 equal
94 Tyto

66
471) 311.0
2826
2840

Corvidae now 311 before 256
" % " 66% " 69

Hawks & eagles still 68% of falconif.

275
23
27
11
56 falcon & accip
392

p. 83 Florida caerulea now definite
only 1 station now
Buteo sp. still pending

33
195
213
21
104
566 Cathartes & Tyto
392
958

3076
958
2118 = hawks & eagles

p. 85 W. cohabitis 5.3% now 8%
Any record as to which pits had most yg Junkers? all had yg. turkeys on about same prop. trad.

62.5'
45'
17
3) 124.5'
41.5'

29
35
64
3) 128
42

13
39

+ Cathartes Condor + Terry
appox 23 5'mm

Caracara 107
+ turkey aprox 190

>) 27.5

Stork 320

7 Pleisto fits

81
78
75
72.5
69
67
51
7) 493.5
70.5

5.5
7
385

12
>) 85

1.4
>) 10
7
30

17
2) 34.0

2
7) 16
14
20

Dear Mr. Fisher:

I now have the measurements for you of the Triotaurus of the fossil birds in the plaster sent to Mr. Peterson. Please understand that I have not been able to get at the actual mounts shown in the plaster but have measured the fractionated elements from the Rancho La Brea collections; there is of course, considerable variation in size to be expected. For your purpose in making up a montage in more or less proper relative size.

Your letter July 4 is just at hand, also, Regarding the so-called January PT 3, it was quite typical of the Rancho La Brea Pleisto cene, both as to mammals & birds. I don't know the number of mammalian species, but there are over 50 species of birds of which 12 or 13 are regarded as extinct. Some of these, however, may be directly ancestral to present-day forms.

By regular mail I am sending you a copy of a previous paper concerning the carbon 14 dating of PT 3.

Relative abundance by groups

1930		3		4		13		16	
Falconif.	60%	Falc.	70	Falc.	67	Falc.	73.1	Falc.	51.2
Gallif.	14.7	Owls	12.5	Galli.	22.6	Water	10.1	Gallif.	19.3
Owls	9.6	Gallif.	7.5	Water	4.9	Galli.	10.0	Pass.	12.3
Pass.&Wd.	9.0	Pass.	5.2	Owls	3.8	Owls	3.8	Water	9.7
Water	5.3	Water	2.8	Pass.	3.6	Pass.	3.5	Owls	6.3

60		61-67		77		Acad.	
Falc.	77.6	Falc.	72.7	Falc.	80.4	Falc.	38.4
Gallif	9.0	Gallif.	9.1	Gallif.	10.3	Water	33.8
Owls.	6.3	Owls	8.1	Water	7.2	Gallif.	12.2
Water	5.6	Water	8.1	Pass.	1.0	Owls	9.9
Pass.	1.4	Pass.	1.3	Owls	1.0	Pass.	3.8

10		28		37		36		A	
Owls	35	Owls	63.6	Falc.	67	Falc.	39.7	Falcon.	38.1
Falc.	43.4	Falcon.	17.5	Owls.	29.4	Pass.	22.3	Pass.	28.0
Pass.	15.7	Pass.	15.6	Pass.	6.9	Owls	14.2	Gallif.	18.3
Water	2.9	Water.	2.5	Water	1.8	Water	10.5	Owls	10.
Gallif.	1.4	Gallif.	0.6	Gallif.	0	Gallif.	14.9	Water	1.8

Either owls or Falconiformes most abundant groups in every pit?

Some interesting comparisons can be made with the early census of the combined pits.

	1930	Present (2 extra pits added 5&5-
Total individuals	4189	5727
Totals by pits *		97 - 1661
Total species	54	130
total sps. by pits		17 - 86
Relative abundance		
Diurnal raptores	60%	17.5% - 80.4% (none average)
Nocturnal " (owls)	9.6%	1.0% - 63.6% (Acad. 9.9%)
√Combined raptores	69.6	48.0% - 96.0% (P.4 nr.aver.)
Waterbirds	5.3%	1.8% - 33.8% Acad. (P60, 5.6%)
Galliformes	14.7%	0 - 22.6% (P36, 14.9%)
Passerines &Woodpeck.	9.0%	1.0% - 28.0% (none average)
Dominant species		
Aquila chrysaetos	X 1st	in 4 pits (2nd in 4, 3rd in 1)
Gymnogyps calif.amplus	4th	" 3 pits
Parapavo	2nd	" 1 pit (Acad.) (2nd in 4, 3rd in 2)
Lophortyx calif.	13th	" 1 pit (A) (2nd in 1)
Pica nuttalli(Magpie)	11th	" 1 pit (36)
Speotyto cunicularia	7th	" 2 pits (10 and 28)
Buteo swainsoni	18th	" 1 pit (37)
Indivs. of extinct sp.	35%	0.6% - 47.8% (13 &77 nr.av.)
No. extinct species	14	18 (2 others Univ. Calif)
No. ext. sps. by pits		9 - 15

Grouping together some of these data, certain individual pits stand out either ecologically or chronologically. For example, the site of the Academy pit. Here birds associated with water -- ducks, swan, various waders, storks, cranes, and geese -- are 6 times more abundant (proportionally) than in the other pits; both here and in Pit A the non-raptores equal the raptores -- in all other pits the raptores predominate.

* There is only slight indication of correlation between size of the pit and the number of individual birds.
Pit 16 which had max.no. was a narrow, but very deep shaft (27')
Pit 4 (next, with 888) was both wide and deep (24x18 and 25 deep)
Pit 10 (3rd, was about 12' across and only 13½deep) 781
Pit 61-67 (very extensive and 20' deep) only 294
Pit 77 (fewest birds, 97) 10x12' and 21½' deep